DOCUMENT RESUME

ED 242 165 EC 162 136

AUTHOR Sindelar, Paul T.; Rosenberg, Michael S.
TITLE Relearning by Normal and Retarded Children Following a Three-Month Lapse in Instruction.
PUB DATE Apr 82
NOTE 15p.; Paper presented at the Annual International Convention of the Council for Exceptional Children (60th, Houston, TX, April 11-16, 1982).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Discrimination Learning; Elementary Secondary Education; *Extended School Year; *Learning Processes; *Severe Mental Retardation

ABSTRACT

The need for continuous instruction of five severely or profoundly impaired (SPI) students (12-18 years old) was examined in light of recent court decisions regarding extended year schooling. SPI Ss and a control group of normal IQ Ss were taught new discriminations. After a 3-month break, the discriminations were taught with procedures, methods, and materials identical to the initial learning phase. Analysis of number of trials necessary to reach criterion for each of the discriminative stimuli revealed that, on the average, SPI Ss took longer to relearn the discriminations than they took to learn them intially. However, there was a wide range of individual variations. Control Ss relearned the discriminations in fewer trials than were required for initial learning. Findings suggested that generalizations about regression among SPI groups are not warranted. For two SPI Ss discrimination relearning was not impeded by the time lapse any more than would be expected for normal IQ Ss. (CL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED242165

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
✓ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

Relearning by Normal and Retarded Children Following a Three-Month Lapse in Instruction

Paul T. Sindelar, Ph.D.
Professor-in-Charge, Special Education
The Pennsylvania State University
Moore Building
University Park, PA 16802

and

Michael S. Rosenberg, Ph.D.
Department of Special Education
Ball State University
Muncie, IN 47306

Running Head: Relearning by Normal and Retarded Children

EC162138

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
Michael S. Rosenberg
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Paper presented at the Annual International Convention of the
Council for Exceptional Children (60th, Houston, TX, April 11-16, 1982)

Abstract

In the Armstrong v. Kline (1979) decision, the U. S. District Court for the Eastern District of Pennsylvania ruled that educational and related services must be provided to all severely or profoundly impaired (SPI) and Severely Emotionally Disturbed (SED) school-aged children who require it. The decision was made in the absence of empirical data to either support or refute the contention that SPI and SED children benefit from extended year schooling. This study was designed to contribute to this data-base by teaching five SPI children a set of discriminations and by reteaching this set following a three-month lapse in instruction. By computing the amount of savings from initial learning to relearning for both an SPI and a normally intelligent group, it was possible to determine the extent to which the SPI children differ from their normally intelligent peers in the need for continuous instruction.

Two of the five SPI children relearned the set of discriminations in fewer trials than were required for initial learning, and their savings from initial learning to relearning fell within the range of the savings for the normally intelligent controls. One SPI subject took as many trials in relearning as in initial learning, while the remaining two took many more trials in relearning than in initial learning. These results supported the court's contention that not all SPI and SED children may be in need of extended year programming. Differences between the two subgroups of SPI subjects are discussed in terms of variables that may influence the need for extended programming.

Relearning by Normal and Retarded Children Following a Three-Month Lapse in Instruction[1]

Introduction

The passage of P.L. 94-142, the Education for All Handicapped Children Act (1975), has raised many issues concerning the rights of handicapped children to an appropriate education. A recent issue that has been the subject of considerable litigation is whether school districts are obligated to provide severely and profoundly impaired (SPI) and severely emotionally disturbed (SED) students education in excess of 180 days. In the Armstrong v. Kline (1979) and subsequent decisions, the School District of Philadelphia was ordered to provide extended year services to all SPI and SED students who required it. A denial of such services, it was claimed, violated handicapped students' constitutional and statutory rights to an appropriate education.

Expert witnesses testifying for both the plaintiffs and defendants agreed that interruptions in educational programming do result in significant losses of skills for the populations in question. A difference of opinion between the two groups of experts did arise when considering the cause and degree of the regression (Leonard, 1981). It was argued by the defendants that regression in skill levels was due primarily to the lack of functional skill education, teacher incompetence, and the failure of parents in maintaining their child's programming. Still, the court rejected the defendant's testimony and stated:

---

[1]The authors thank The Pennsylvania State University College of Education Alumni Society for the support it provided for conducting this research.

> . . . . for some SPI children, including the named plaintiffs, interruptions in programming, because of regression and length of time it takes to regain lost skills and behaviors, render it impossible or unlikely that they will attain the state of self-sufficiency that they could otherwise reasonably be expected to reach. (476 F. Supp. at 597)

The court's decision to require that districts provide education in excess of 180 days for those in need has had considerable impact across the nation. The expense of providing a full year of schooling to those children who require it imposes an enormous burden on districts, especially at a time of fiscal retrenchment. Therefore it is imperative to establish the empirical base for the effects of extended year programming that was missing from the Armstrong v. Kline testimony and from the testimony in subsequent appeals.

The purpose of this study was to assess the differences between severely or profoundly impaired (SPI) children and children of normal intelligence in relearning following a three-month lapse in instruction. It was hypothesized that while normally intelligent children would require fewer trials in relearning, SPI children would require as many trials in relearning as in initial acquisition.

Methodology

Subjects

Five severely and profoundly impaired children (SPI), aged 12-18, were recruited from a state center for the developmentally disabled. All

of the subjects had been institutionalized for at least three years and were measured to possess IQ's of less than 40. All of the subjects lived in group cottages which provided individual sleeping quarters, a large day room, and several therapy rooms.

Additionally, five normal children, possessing IQ's in the average to above average range were recruited to serve as controls. As a group, these subjects fell within the chronological age range of the SPI's. The normals all attended regular junior or senior high school programs.

Materials

Two distinct curriculums were developed to teach a series of new discriminations. For the SPI group, an instructional set of 20 common objects (e.g., spoon, pencil, etc.) were drawn on 5 x 7 index cards. This set was used to pretest the subjects to determine a subset of items that the subjects could not identify from their verbal labels. Once a set of unknown drawings was determined, five were selected to serve as an instructional set, and another five were chosen as distractors.

A curriculum was developed for the normal control subjects that was roughly analogous to the discrimination task of the SPI group in that the subjects did not know the verbal labels for the stimulus pictures. The tasks involved matching bird calls to appropriate stimulus bird drawings. A pre-recorded tape of the bird calls signaled the student to point to the picture of the correct bird.

Experimental Procedures

Initial learning. Instruction for both the SPI's and normals followed the conventions of the discrimination learning methodology, as originally

presented by Zeaman and House (1963). The SPI subjects were individually taken to a quiet area of their cottage where they were positioned facing the experimenter. Two of the stimulus drawings were placed in front of the subject. The subject was then asked to point to one particular object (e.g., Fred point to the spoon). If the response was correct, the subject immediately received an edible reinforcer and praise. If the response was incorrect, the experimenter physically prompted the correct response while repeating the instruction (No Fred, this is the spoon.).

Five stimulus pictures were presented for 10 trials each. The presentations were randomly distributed over the course of a 50 trial session. One 50 trial session was presented per day. The mastery criterion for the individual stimulus pictures was 90 percent performance (9 of 10) for two consecutive instructional sessions. The subjects had to attain this rate with instructional set distractors, even though instruction began with distractors from the noninstructional set.

Each normally intelligent subject was required to identify a picture of a bird when presented with a recording of the bird's call. Presentations of 5 bird calls were randomly distributed over a 50 trial session. Prior to each call, an experimenter presented two pictures: the correct illustration and a distractor. Upon hearing the call, the subject was required to point to and name the correct picture of the bird. If the response was correct, the subject was praised; an incorrect response was immediately corrected. Mastery criterion was also 90 percent performance for two consecutive days. As with the SPI subjects, the normals had to attain this rate when confronted with instructional set distractors.

Data for both groups were recorded by experimenters on pre-printed data sheets. A plus (+) was placed in an appropriate area if the response was correct and a minus (-) was recorded to represent an incorrect response.

Relearning. After a three-month break, the experimenters retaught the two curriculums. Experimental procedures, methods, and materials remained identical to those utilized during the initial learning phase.

Dependent Measures

The SPI's and normals were assessed by recording the number of trials necessary to reach criterion for each of the discriminative stimuli under each of the two learning conditions. Within subject comparisons yielded data reflecting the number of trials saved between the initial learning and relearning phases. Between group comparisons reflected differences in the range of savings for the two groups.

Results

The number of trials to criterion by discrimination for the SPI and normally intelligent children are presented in Table 1 for both initial learning and relearning. In initial learning only two SPI subjects (#1 and #3) mastered all five discriminations; two subjects (#2 and #4) mastered only one discrimination (in spite of more than 1,000 trials on some discriminations); and subject #5 mastered three. All subjects except subject #3 mastered these previously mastered discriminations in relearning. Subject #3 mastered only three of the five discriminations in relearning that she had mastered initially and in computing her percent savings only these three discriminations were used. All of the subjects in the normally

intelligent group mastered all five discriminations in both initial learning and relearning.

Insert Table 1 about here

For the SPI group, savings ranged from 55 to -111 percent and averaged -9.8 percent. Thus, on the average, the SPI subjects took longer to relearn the discriminations than they took to learn them initially. However, these group data obscure the wide range of individual variation: two of the SPI subjects relearned the discriminations in many fewer trials than were required for initial acquisition; one relearned in the same number of trials; and two required many more trials to relearn than were required in initial acquisition. All of the normally intelligent subjects relearned the discriminations in fewer trials than were required for initial learning in contrast to the variability of the performance of the SPI group. The normally intelligent group averaged 44.4 percent savings, and savings ranged from 25 to 63 percent.

Discussion

It is clear from these data that, at least with regard to discrimination learning, generalizations about regression among SPI groups are not warranted. While two subjects required more trials in relearning, two relearned in many fewer trials than during initial acquisition. In this sense, our findings are consistent with the courts' rulings: not all SPI children may be in need of extended year programming because of significant regression during summer breaks from school. It is important to note too

that for the two SPI subjects who relearned in fewer trials than the number of trials in initial learning, the percent of savings fell within the range of savings for the normally intelligent group.

Obviously, the findings of the study must be interpreted with caution. First, the sample of behavior examined is restricted: discrimination learning was investigated, but no attempt was made to assess other important functional skills such as self-help or language. Unlike discrimination learning, in which the skills acquired are essentially nonfunctional outside the training environment, language, self-help, and other such skills are functional outside the training environment and may be practiced and reinforced in nontraining settings. Second, the small sample size limits the confidence with which these results can be generalized to a larger population of SPI children. Nonetheless, we have determined that for two SPI children, discrimination relearning was not impeded by a three-month lapse in training (at least not any more than would be expected for normally intelligent children of the same age on an analogous task).

Clearly what is needed (and our data support this need) is a large scale and comprehensive evaluation of the effects of extended year programming for the populations in question. The potential expense involved in providing extended year services and the need for establishing reliable decision-making procedures make such an evaluation imperative.

Finally, it is interesting to speculate about the behaviors that differentiated the two groups of SPI subjects--those who required fewer and those who required more trials in relearning. Most relevant in this regard

are anecdotal reports of the behavior of the two children who fell into the second group. In relearning, these two subjects were more resistant to the instructional procedures and more disruptive during the training sessions. Although we have no data to support this assertion other than anecdotal reports, regression in social behavior and compliance would seem like logical variables to investigate in determining which SPI students might benefit most from extended year programming.

References

Armstrong v. Kline. Civil Action No. 78-172 (United States District Court for the Eastern District or Pennsylvania, 1979).

Leonard, J. 180 day barrier: Issues and concerns. Exceptional Children, 1981, 47, 246-253.

Public Law 94-142, Education for All Handicapped Children Act, November 29, 1975.

Zeaman, D., & House, B. J. The role of attention in retardate discrimination learning. In N. R. Ellis (Ed.), Handbook of mental deficiency. New York: McGraw-Hill, 1963.

Table 1

Trials to Criterion for Initial and Relearning for SPI and Normally Intelligent Groups

		INITIAL LEARNING (TRIALS IN MULTIPLES OF 10)					RELEARNING				
	Subject Number	Picture 1	Picture 2	Picture 3	Picture 4	Picture 5	#1	#2	#3	#4	#5	Composite Savings
SPI POPULATION	1	11	11	11	11	11	4	2	2	9	8	55%
	2	5	*	*	*	*	5	*	*	*	*	0%
	3	15	6	12	9	12	*	21	19	17	*	-111%
	4	6	*	*	*	*	3	*	*	*	*	50%
	5	18	23	22	*	*	30	32	28	*	*	-43%
NORMAL POPULATION	1	2	5	2	4	2	2	2	2	3	2	27%
	2	7	7	5	5	5	3	4	3	2	2	52%
	3	5	3	7	3	4	3	2	2	2	2	50%
	4	6	3	5	7	3	4	4	4	2	4	25%
	5	6	8	5	6	2	2	2	2	2	2	63%